

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 April 2005 (07.04.2005)

PCT

(10) International Publication Number
WO 2005/031977 A2

- (51) International Patent Classification⁷: **H03L**
- (21) International Application Number:
PCT/GB2004/004045
- (22) International Filing Date:
23 September 2004 (23.09.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0322538.0 26 September 2003 (26.09.2003) GB
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

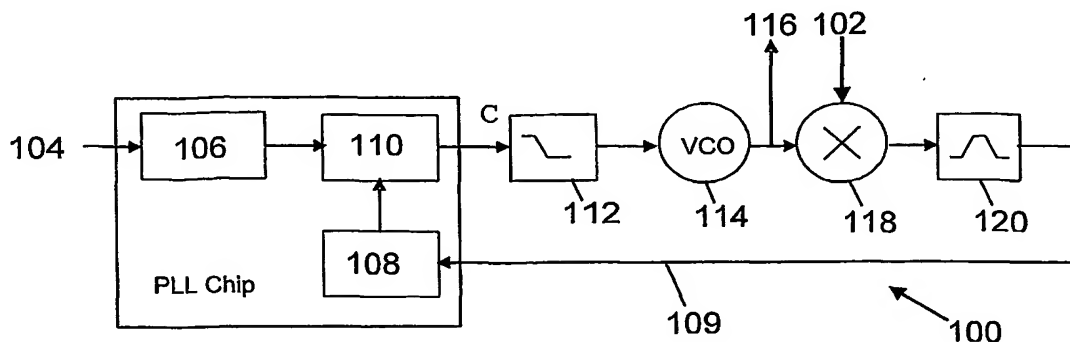
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **PHASE CONJUGATE CIRCUIT**



(57) **Abstract:** A phase conjugate circuit is disclosed for deriving phase conjugation information from a main input signal of a given frequency comprising: an input receiving a reference input signal; at least one phase locked loop circuit comprising an oscillator having a main output signal, an input receiving a PLL input signal, an input receiving a feedback signal from the oscillator and at least one phase detecting means, wherein the phase detection means detects any phase difference between the PLL input signal and the feedback signal and provides a phase control signal to the oscillator. In one embodiment, the main input signal is mixed with the main output signal to provide the feedback signal and the reference signal is the PLL input signal. In an alternative embodiment, the reference signal is mixed with the main output signal to produce the feedback signal and the main input signal is the PLL input signal. In a further alternative embodiment, the main input signal is mixed with the reference signal to provide the PLL input signal and the main output signal is the feedback signal.

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